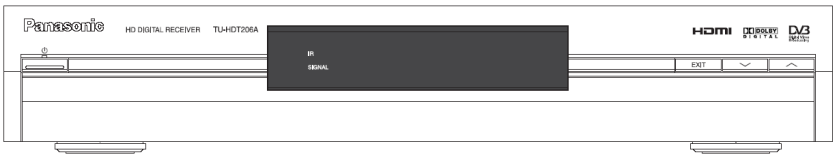
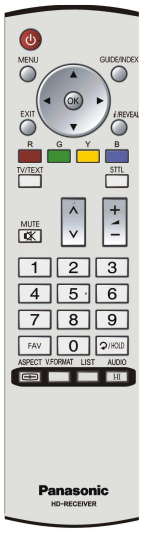
Panasonic

# Operating Instructions
# High Definition Digital Receiver

**Model No.** **TU-HDT206A**




DVB Digital Video Broadcasting

DOLBY DIGITAL

HDMI HIGH-DEFINITION MULTIMEDIA INTERFACE

Please read these instructions before operating your set and retain them for future reference.
The illustration shown is an image.

**English**

25001-B2401 26 March 2007 v3.2

# Welcome

We hope you have many years of enjoyment from your new Panasonic HD Digital Receiver.
The following instructions will enable you to quickly set up and install the equipment and begin receiving the terrestrial digital TV services in your reception area.
The availability of digital TV services in your area is dependent upon the digital signals available from your local broadcasters and the condition of your aerial system.

**This Digital Receiver is intended for the reception of Digital TV picture and sound signals.**

- If the Digital Receiver is exposed to drastic temperature changes this can cause liquid condensation. Allow the condensation to evaporate before plugging in the Digital Receiver to the power supply.
- Do not place the Digital Receiver in the immediate vicinity of a heat source or in direct sunlight as this will prevent appropriate cooling.
- To prevent fire, never place any type of candle or naked flame on top of or near the Digital Receiver.

# Warnings and precautions

- Only install the receiver in a safe location (away from any wet environment).
- Only plug the receiver into an AC 220V to 240V power supply.
- Do ensure the AC plug is fully inserted into the socket.
- Do not touch the AC cord or plug with wet hands.
- Unplug the receiver immediately if smoke or a strange smell is emitted from the receiver.
  - Do not attempt to repair the receiver by yourself; have the receiver repaired at your local Panasonic repair agent.
- Unplug the receiver if any foreign substance or water enters the unit, or if the unit is damaged and the covers are broken open.
- Keep liquids and other foreign objects away from the receiver.
  - Do not place containers with water (flower vase, cups, cosmetics etc) or small metallic objects on the receiver.
- Do not insert or allow to fall into the receiver any foreign objects (fire or shock may result).
- In the event of a thunder storm or lightning, do not touch the receiver or the cables.
- Do not plug in the receiver to the AC supply if the AC power cord or power plug is damaged.
- Do not pull on the AC lead; hold the AC plug to remove it from the AC socket.
- When you move the receiver, be sure to unplug from the AC socket.
- Do not cover or obstruct the ventilation slots of the receiver.
  - Install the receiver in a location that allows ventilation of heat from it.
- Do not put heavy objects on the top of the receiver.
- When you clean this unit, be sure to unplug the power cord from the AC outlet for safety.
- Wipe the AC plug with a dry cloth at regular intervals. (Moisture and dust may lead to fire or electric shock.)
- Handle the remote control and it's batteries as below:
  1. Use only the specified type of batteries, and do not mix battery types (such as alkaline or manganese).
  2. Do not mix old and new batteries.
  3. Do not use rechargeable batteries.
  4. Avoid contact with liquids or moisture.
  5. Remove the batteries if not using the remote control for a long period of time.
  6. Do not allow the + and - terminals of the batteries to come into contact with metallic objects.
  7. Do not short-circuit, heat or disassemble the batteries, or dispose of them into liquids or fires.

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# 1 Introduction

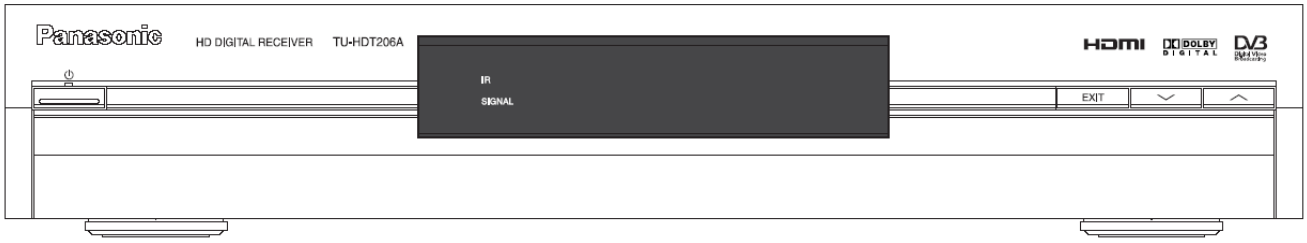
This Operating Instruction Book is the GUIDE to your digital receiver. In it you can find comprehensive descriptions of the functions of your receiver. Once you become acquainted with the operations of your digital receiver, you will only need this manual for reference.

## 1.1 IMPORTANT: First time Installers

**IMPORTANT**: For first time installers, please read Section 4, “Installation of the Digital Receiver”, to learn how to connect your digital receiver to other A/V equipment. Once you have completed the setup, go to Section 6.2, “Video Menu”, to select various system settings according to your personal preference, and Section 6.3, “Audio Menu” and Section 6.5, “Tuning Menu”, to set your region for correct current time and to conduct channel search.

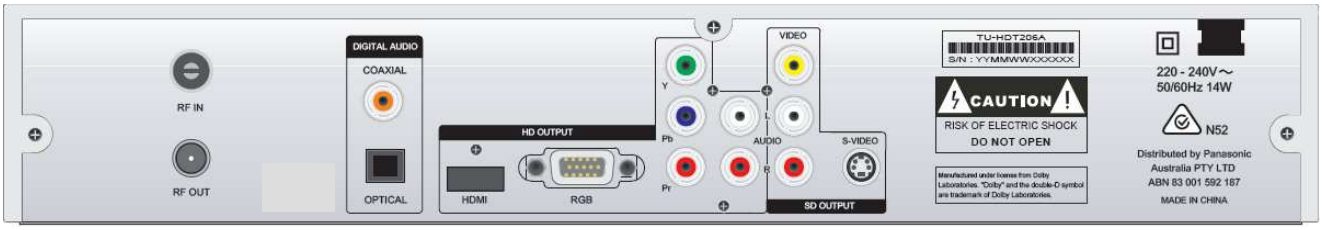
# 2 The Digital Receiver

## 2.1 Front Panel




**(Power Button)**: Turns the digital receiver On / Off (Standby mode).
**EXIT Button**: To return to the previous menu from the sub-menus.
**Display**: Shows the logical channel number when the box is switched on.
**Front Panel Arrow Buttons**: ▲/▼ buttons to select channels or settings within the menus.
**Stand-By Indicator (LED)**: Lights red in Stand-By mode. When the digital receiver is working the LED becomes green.
**Infrared (IR) Indicator (LED)**: The red LED flashes, indicating the box has received a command from the remote control.
**Signal Indicator (LED)**: When a signal of a channel is successfully acquired the yellow LED will light up.

## 2.2 Rear Panel



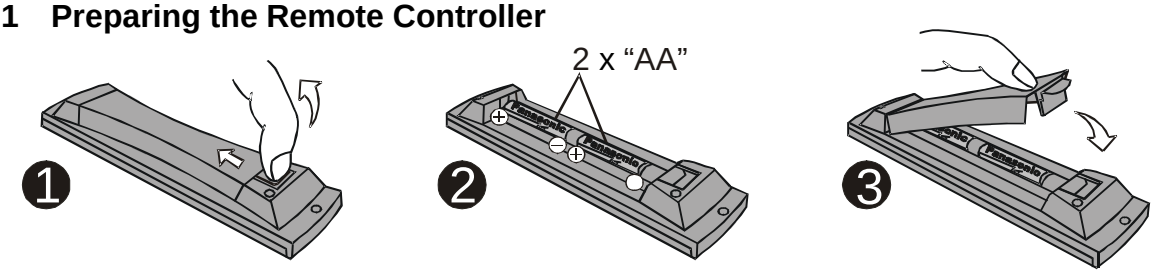

**AC Power Mains**: 220 to 240 V; 50 / 60 Hz
**RF IN**: For connection to cable from outdoor terrestrial antenna.
**RF OUT**: For connection to your TV antenna IN or Video Recorder RF IN.
**S-VIDEO**: Y/C video for connection to standard definition TV or Video Recorder.
**VIDEO**: Composite video output for connection to TV, Video Recorder or other A/V Receiver.
**AUDIO**: Two sets of stereo audio outputs for connection to TV, Video Recorder or other A/V Receiver.
**YPbPr**: Y/Pb/Pr component video for connection to high definition display.
**RGB (15pin D)**: R/G/B/HS/VS video for connection to high definition display.
**COAXIAL**: Digital Audio output by coaxial for connection to AV processor.
**OPTICAL**: Digital Audio output by optical for connection to AV processor.
**HDMI**: Digital video and audio output for connection to high definition display.

## 2.3 Box Contents

The box that contains your digital receiver should also contain the following items:
Remote Controller and batteries (AA Size)
RCA video cables (one white / red, and the other cable red / green / blue)
RF cable
User's Manual with Warranty Information

# 3 The Remote Controller

## 3.1 Preparing the Remote Controller




1). Remove the cover of the battery compartment (on the back of the handset) by pushing the tab back and then lifting.
2) Insert 2 AA (1.5 V) batteries according to the + and – markings indicated inside the battery compartment.
3) Replace the cover.

Test the remote controller by pressing any key and check if the IR-LED (Red) on the front panel of the receiver flashes.

## 3.2 Remote Control Button Functions:

: To turn your receiver on/off (standby mode).

MENU: To display the “Main” Onscreen Display.

EXIT: To go back in the menus.

Cursor buttons: To select items in the menus.

Cursor buttons: To cycle through options within the menus.

OK: To confirm choices and selection of highlighted item.

: (Red): Application defined function key.

: (Green): Application defined function key.

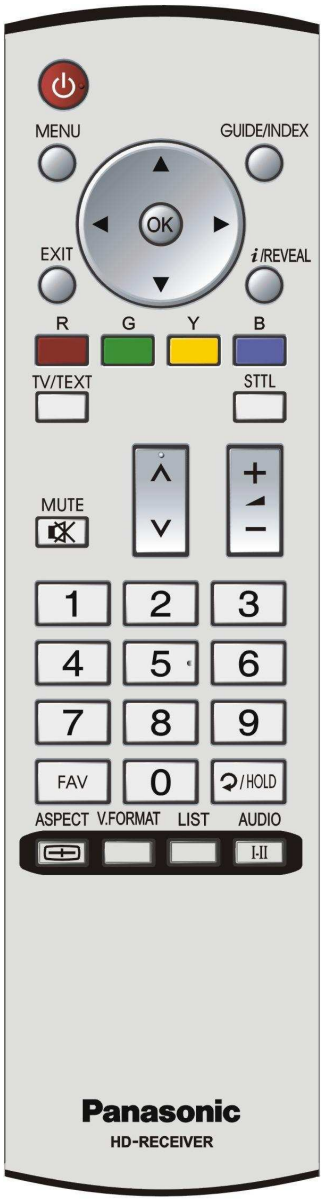
: (Yellow): Application defined function key.

: (Blue): Application defined function key.

: Mute function, to turn on/off sound (only used for analogue audio output).

**Number (0~9)** keys: To select channels directly. Broadcasters have allocated logical channel numbers (LCN) to their services based on their service number identity. The programs can be selected by the LCN.
1: TEN,
2: ABC,
3: SBS,
5: TEN Regionals,
6: SEVEN Regionals,
7: SEVEN,
8: NINE Regionals,
9: NINE.

FAV: To select channels from the favourites list.




GUIDE/INDEX: To obtain a list of programs on available channels. This information is only shown if your broadcaster transmits program information.
INDEX: To go to index page in Teletext mode.

/ REVEAL

: To call up the display information banner and program synopsis information. Also used in program guide menu. This information is only available if the broadcaster or network transmits the information.

REVEAL : Show the hidden information in the Teletext mode.

TV/TEXT: To toggle between TV pictures and Teletext.

STTL: To turn closed captions on/off.

: For changing channels.

: For volume adjustment (only used for analogue audio output, not HDMI).

/ HOLD: To toggle between present and previous channel.
HOLD: To stop current page in Teletext mode.

ASPECT : Aspect ratio, to change to 16:9, 4:3 letterbox or 4:3 centre-cut mode.

V.FORMAT: To select the different HD display formats of 576p, 720p & 1080i. (see page 15)

LIST: To set up Favourites

AUDIO: To select the desired audio sound track.

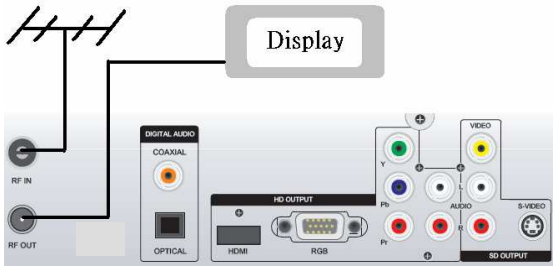
# 4 Installation of the Digital Receiver

## 4.1 Connection of the Digital Receiver

The following illustrations show some examples for connecting this HD digital receiver. Select the connection that is best suited for your needs. Many other connections may be possible when optional devices such as RF cable splitters are included in your system. These devices may cause signal degradation and, if too many are used, poor quality picture and sound may result.

### Terrestrial Antenna Cable Connection (A)

Connect the RF antenna cable to the HD digital receiver RF IN connector. Also connect the cable from RF OUT to the TV RF IN connector on the rear of your television. This connection allows your TV set to receive normal analogue programs. (Refer to A)



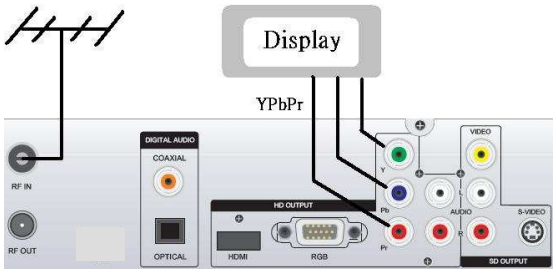

***(A) Aerial Connection***

### Video Connections

The HD digital receiver has several types of video connections. Please select from HDMI, YPbPr and RGB for high definition video, and VIDEO and S-VIDEO for standard definition video. The HDMI, YPbPr and RGB sockets detect when a plug is inserted and the digital receiver configures the video output to suit the connection type made to the display.

### YPbPr Connection (B)

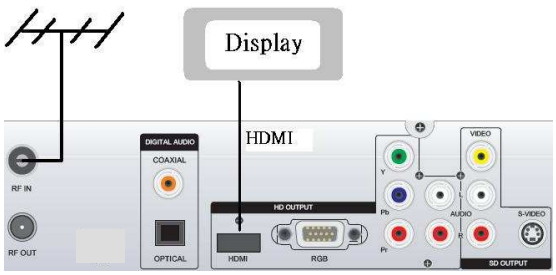
Connect the YPbPr component video output socket on your digital receiver to your display device's YPbPr component video input. Be sure to match the colours on the RCA sockets with the coloured plugs. (Refer to B) At the start of the initial installation, the video format is set as HD Format 576p. The video format can be changed to other HD formats after the installation is finished by "V Format" on the remote control.




***(B) YPbPr Connection***

### HDMI Connection (C)

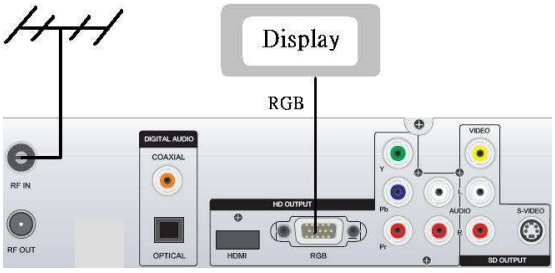
Connect the HDMI output socket on your digital receiver to your display device's HDMI input. The HDMI connection also includes audio signals set at a fixed level. (Refer to C) The HD digital receiver can also be connected to a DVI input on a display. Please check that DVI input can display the digital receiver HD video formats. A HDMI to DVI cable (not supplied) is required for this. Also the audio needs to be connected by the RCA connector (red/white) cable. Note: If HDMI cable is removed when the digital receiver is switched on, the OSD will NOT change to any other video output terminal. The receiver must be switched off when the HDMI cable is removed.




***(C) HDMI Connection***

### RGB Connection (D)

Connect the RGB 15pin D socket to your display device. (Refer to D)
Check the display video specifications, many displays cannot show 50Hz TV formats that the STB outputs.
Note: RGB Cable is not supplied.
Note: There is no RGB output signal when component video (YPbPr) is connected.




***(D) RGB Connection***

### VIDEO and S-VIDEO (E)

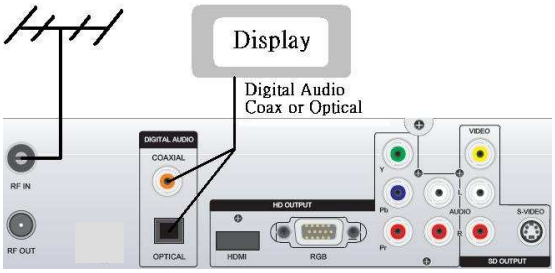
Connect the VIDEO output socket on your digital receiver to your TV's video input socket.
Alternatively, connect the S-VIDEO (Y/C) output socket on your receiver to your TV's S-Video input socket.(Refer to E)
Note: The cable is not supplied.
Note: VIDEO or S-VIDEO can be connected to a VCR or DVD recorder if they are not being used with a display. When an HD connection is made to the digital receiver, there is no OSD on the VIDEO or S-VIDEO connection output pictures.

***(E) VIDEO / S-VIDEO Connection***

### Audio Connections

### DIGITAL AUDIO (F)

If the display device is equipped with Dolby Digital audio and PCM audio decoding capability, connect the DIGITAL AUDIO output of the digital receiver to the display device's Digital Audio input using either the OPTICAL or COAXIAL socket. (Refer to F)
Alternatively, connect the DIGITAL AUDIO output to an A/V receiver with Dolby Digital decoding and PCM decoding capability.
Note: The cable is not supplied.




***(F) DIGITAL AUDIO Connection***

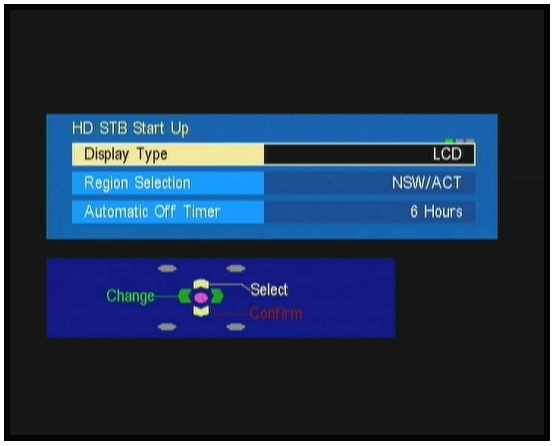
### Analogue Audio (G)

Connect the L & R AUDIO output RCA sockets on the digital receiver to the stereo L & R Audio inputs of the display device and/or A/V receiver. (Not required with HDMI).
(Refer to G). Please use the RCA sockets associated with the video format (HD or SD) that is connected to the display.

***(G) Analogue Audio Connection***

## 4.2 HD STB Start Up

### Display Type




The first on-screen display of the installation process will show Display Type selection. Please change to the type of display the HD digital receiver is connected to. The choice is either LCD, PDP (Flat panel displays) or CRT (eg Standard television).
Select using the cursor buttons on the remote control keypad.
Note: Not all video formats are available in all modes. The following table describes the available formats in each mode.
CRT selection does not allow 720p video format.

| | HD (YPbPr & RGB) | | HD (HDMI) | | SD (VIDEO, S-VIDEO) | |
|---|---|---|---|---|---|---|
| | LCD/Plasma | CRT | LCD/Plasma | CRT | LCD/Plasma | CRT |
| 576i | | | | | X | X |
| 576p | X | X | X | | | |
| 1080i | X | X | X | | | |
| 720p | X | | X | | | |

Table 1: Output format table

### Region Selection

The first time the digital receiver is installed, or after default settings are restored (section 6.5 page18), please select the state or territory that you live in. This will enable the digital receiver to display the correct local time.

### Automatic Off Timer

This function requires a time to be set for the automatic shutdown of the digital receiver. The receiver will automatic go into standby to save power. The time is measured from the last received command sent to the receiver. The default setting is 6 hours.

After selecting the settings for Display Type, Region Selection and Automatic Off Timer, press OK to confirm the selection. The digital receiver will automatically step to the channel tuning process.

## 4.3 Automatic Channel Tuning

The first time the digital receiver is installed, or after default settings are restored, the digital receiver will automatically scan for available digital services. This will take around five minutes or so.

# 5 Operating Instructions: Knowing your basic controls

To become acquainted with the operations and functions of your receiver, please learn how to use the control buttons on the Remote Control and the Front Panel. The following segment is an introduction to features that you will most commonly use.

## 5.1 Switching On Your Digital Receiver

To switch on the digital receiver please, first plug the power lead into a 240V AC socket. The digital receiver remains in constant "STANDBY" when plugged into a 240V supply. However it does require time to start up and so the picture and sound is not immediately available when the on button is pushed.
Switch on your receiver by pressing either the ⏻ button on the remote control or the ⏻ button on the front panel. While the digital receiver is in normal viewing mode, the green LED lights up. When not using the digital receiver, put your equipment in the "STANDBY" mode by pressing either one of the ⏻ / ⏻ buttons again. When the red "STANDBY" LED lights up, it indicates the digital receiver is in "STANDBY" mode.

## 5.2 Display Information Banner

The Display Information Banner shows information about the program that you are currently watching. The banner appears briefly whenever a new channel is selected or when there is a problem with signal reception. To show the banner, press the REVEAL button. Pressing REVEAL again will display the program synopsis. To exit the synopsis, continue pressing the REVEAL button. Pressing the EXIT button will remove the banner from the screen at any time. The banner shows information about program, the time it is being broadcast and the type of service. Pressing cursor left or right buttons (◄ ►) will toggle the synopsis to the next program information.

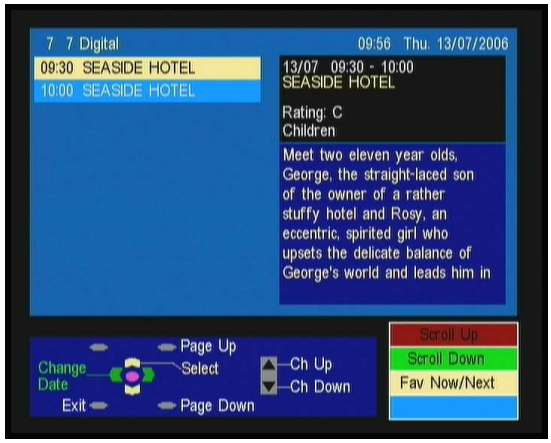
**Banner Symbols**

| | |
|---|---|
| SD | Standard Definition Picture |
| HD | High Definition Picture |
| CC | Closed Captions (note not programs have CC even if symbol is displayed) |
| TXT | Teletext service is available with this program |
| I-II | Program has MPEG and Dolby Digital Audio |
| Now | Program that is being broadcast now |
| Next | Program that is being broadcast next |

**Parental Guidance**

The content ratings of programs are displayed on the information banner and the electronic program guide. The ratings are P (pre-school), C (children), G (general), PG (parental guidance), M (mature adult audience), MA 15+ (mature adult audience 15+), AV 15+ (adult, strong violence 15+) and R (restricted 18+).
However, not all transmissions carry ratings information to activate this function.

## 5.3 Program Guide




### Programs Schedule

The EPG is in classic terms a TV Guide, except it is presented on your TV screen. The EPG allows you to see in advance, depending on services provided by the broadcaster, to the next program, or a few days or up to one week of TV programs and program information. There are 2 Guide onscreen displays types, the first shows the 'now' program and the 'next' program of all the channels. The second Guide display shows the programs up to one week in the future of the channel that is being received.

Push the remote control "Guide" button to display the Electronic Program Guide (EPG). Use the arrow keys on the remote control to access the EPG information of the various channels and programs.

In the list, highlight the desired program by pressing the arrow buttons. Once you have selected your choice (the highlighted block will appear in a different colour), the detailed description of the program is displayed or can be accessed by the information button, depending on the guide display type.
If the broadcaster has not transmitted the detailed description for the program, the display area will remain blank. If you wish to see what programs are being broadcast on other channels, use the channel up or down button to access the list of all programs shown for the current and next days (subject to availability).

## 5.4 Changing or Selecting Channels

There are several methods to change or select a channel. You can either use the front panel or the remote control buttons.
The following methods are available for you to choose from:

Press Channel on the remote control (channel changes according to favourite channel settings).

Directly enter a logical channel by using the number keys on the remote control. Broadcasters have allocated logical channel numbers (LCN) to their services based on their service number identity. The programs can be selected by the LCN.
LCN channel selection is not aligned with favourite channels setting.

1: TEN,
2: ABC,
3: SBS,
5: TEN Regionals,
6: SEVEN Regionals,
7: SEVEN,
8: NINE Regionals,
9: NINE.

Pushing the Cursor Up/Down ▲▼ buttons can be used to display the banner, and then change the banner to the next channel banner information. To view the new channel, the OK button must be pushed while the banner is displayed.

Use ↩ / HOLD to toggle between current channel and previously watched channel.

## 5.5 Audio Mode Selection

Australian broadcasters transmit MPEG and/or Dolby Digital audio with all programs. The audio mode default setting is MPEG. This can be changed by pressing the AUDIO button on the remote control to display the Audio OSD. The Audio OSD shows on screen the available soundtracks. The currently played track is highlighted. Use the cursor up/down buttons to change the selection. The OSD will disappear in a few seconds or Exit will remove the OSD.

## 5.6 SD Picture Format Selection

During the installation, the digital receiver aspect ratio is automatically set to widescreen 16:9 when a HD format video is selected as the output format. With a SD output format, the aspect ratio is set to 4:3.

The aspect ratio can be changed, in SD, between widescreen 16:9, centre cut for 4:3, or letterbox. The Display Aspect can be changed using the remote control by pressing the aspect ▭ button to bring up the OSD. The OSD will have one aspect selection highlighted. To change the display aspect, push the aspect button until the desired picture aspect is selected. The OSD will disappear after a few seconds. This function is the same as the SD Picture Format setting on page 15.

### 5.7 SD Onscreen Display

The video output from the SD terminals (VIDEO & S-VIDEO) have the OSD's(on screen displays) for viewer information when the SD output is connected to a display. However when the SD video output is connected to a VCR or DVD recorder, the OSD's are automatically removed from the SD video output by the connection of HD video connectors to the digital receiver.
Audio levels can only be changed by the digital receiver volume control on the RCA audio outputs that are associated with the OSD. The audio output to a VCR or DVD recorder is always set at maximum audio level.

## 6 Using the Main Menu

Your receiver comes with a directory of features or the Main Menu. The Main Menu is your gateway to customising many of the features offered by your receiver. To navigate through the menu items, use the coloured keys, cursor up/down, cursor left/right and OK buttons on the remote control. The buttons that can be used to select options are displayed at the bottom of the screen.
To access the Main Menu, press the MENU button.

The Main Menu feature comprises the following categories of services:

**Favourites List** provides access to:
Favourites List 1, 2, & 3 set up

**Video Menu** provides access to:
HD Video Output Format
HDMI Format
Teletext Contrast
Display Time Out
SD Picture Format

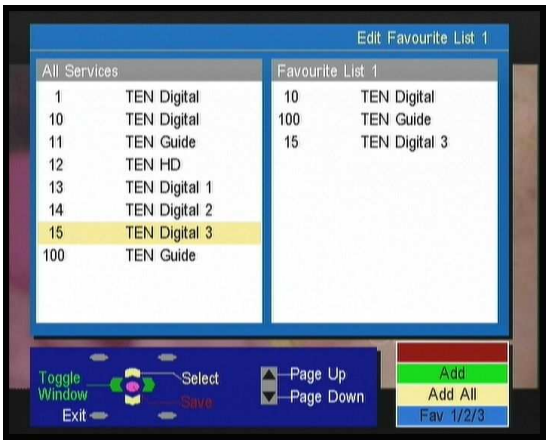
**Audio Menu** provides access to:
Volume Control
Audio Delay Time
MPEG Audio Level
Audio Mode Priority
Digital Audio

**Power Saving Setup** provides access to:
Automatic Off Timer

**Tuning Menu** provides access to:
Signal Display
Channel Installation
Region Select
Restore Default Settings
System Update

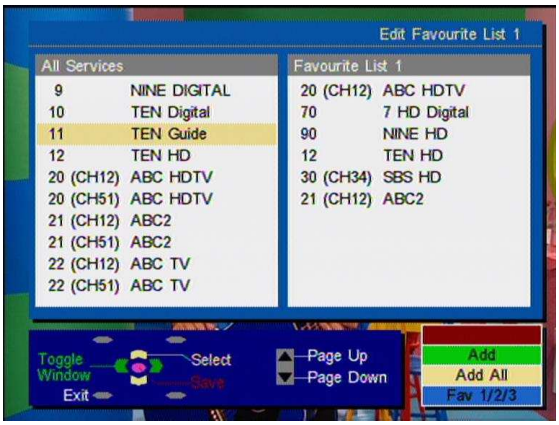
**Diagnostic Information** displays the Software Version number and serial ID of your receiver.

## 6.1 Favourites List




This feature allows you to personalise your list of favourite channels, TV or Radio. The set up of favourites is accessed from the Main Menu or by the “LIST” button of the remote control.
Select FAV 1, 2 or 3 and follow the navigation instructions. Highlight a channel by using the cursor up/down buttons, then press the coloured key shown on the navigation OSD to create the favourites lists. When changing channels using the channel up or down keys, the receiver changes to the next/previous favourite channel, and skips other channels.
Three “Favourites” lists can be set up.
FAV button on remote control is used to select the favourite channels and the 3 personalised lists.
When in a FAV List mode:
- Guide / EPG will only display program information for channels in the FAV list.
- When a channel is direct keyed via the remote control that is *not* in the current FAV list, the current FAV is automatically reset to ‘All Services’.

### Favourite Lists and Duplicated Channels



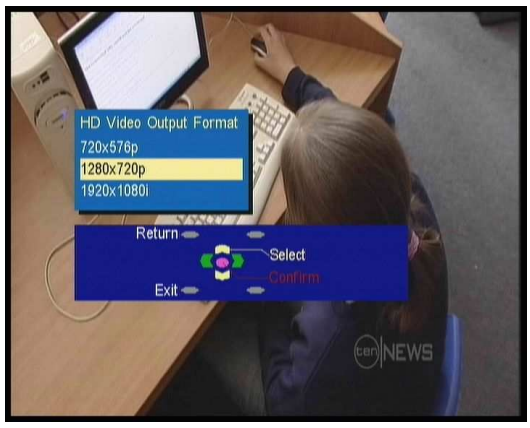

Depending on your location, the ‘All Services’ channel list may contain duplicated channels received from different transmission sites. Such channels have a (CHxx) suffix to indicate the physical RF transmission channel.

When adding duplicated channels to your Favourite List’s, *always* select channels with the *same* (CHxx) suffix (see ABC channel example) to ensure they are received from the *same* transmission tower with the *same* signal strength.

## 6.2 Video Menu

This menu has functions for setting up the digital receiver to suit the display. Depending on the digital receiver connections to the display, some of these functions may be disabled and shown with a grey background colour.

## HD Video Output Format




The initial installation of the digital receiver defaults the video output format to 1280x720p for LCD and PDP TV's and 720x576p for CRT TV's. LCD and Plasma TV's can be changed to 720x576p, 1280x720p and 1920x1080i video formats. CRT TV selection is restricted to 720x576p and 1920x1080i video formats.
The selection is made by moving the up/down cursors to the desired format and confirming the selection by the OK button.
The remote control "V Format" button also can be used to change the video output format, in the sequence 576p, 720p, 1080i and back to 576p. The format type is shown briefly on the front panel display of the digital receiver and in the top right of the picture.

## HDMI Format

The digital video via the HDMI interface is available as RGB 4:4:4 , YCbCr 4:4:4 , and YCbCr 4:2:2. The digital receiver automatically selects the format that best suits your display. This menu item is only available when an HDMI connection is made between the digital receiver and display.

## Teletext Contrast

The contrast of teletext pages can be adjusted to suit your display by selecting from the 3 available settings.

## Display Time Out

This feature allows you to select the length of time the Information Banner is displayed on the picture. The time selection is 3 seconds, 6 seconds, 9 seconds, and 12 seconds.

## SD Picture Format

This setting changes the video format of the CVBS and S-Video output only. It is only operational when there is no HD format connection made to the display.

Letterbox

If your display has a 4:3 aspect ratio, and the transmission of a program happens to be 16:9, the **Letterbox** mode will give you a complete picture, but black areas will appear at the top and bottom.

Centre Cut

Alternatively you can choose the **Centre Cut** mode to play the program in a full-screen format. However picture information on the left and right sides will be cut off.

16:9 Wide

If your display has a widescreen aspect ratio, then set the mode to **Widescreen 16:9**. If a program happens to be in 4:3, black areas will appear at the left and right of the screen in order to present the picture in a correct aspect ratio.

## 6.3 Audio Menu

### Volume Control

This menu item is used to activate or deactivate the volume control buttons on the remote control. If the digital receiver is connected to the display by HDMI(DVI), the volume control is automatically set to maximum and deactivated. The volume control does not function on SD output to a VCR or DVD recorder.

### Audio Delay Time

Some types of displays may have different delay times in displaying pictures, which may cause a slight problem with lip sync. This means that the audio is not heard at the same time as the person is speaking.
This feature allows you to select a time delay suitable for the video display to synchronise with the audio. The delay time depends on which choice appears to provide best performance of lip sync on your display device.

### MPEG Audio Level

The MPEG audio level can be adjusted from –12 db to 0 db. This adjustment can be used to equalise the Dolby Digital audio and MPEG audio sound levels.

### Audio Mode Priority

The Audio Mode Priority is used to choose the preferred sound track when both Dolby Digital (Dolby D) audio and MPEG audio are received with the program. Use the cursor [◄ ►] to select your choice. You may select any soundtrack channel by channel, regardless of the audio mode setting made in this menu.

If the default Audio Mode is Dolby D audio, and the input signal contains only MPEG audio, the default mode will change to MPEG automatically. If the Audio Mode is set to Dolby D audio, the digital receiver will automatically select the Dolby D audio soundtrack when it is available.

We recommend Dolby Digital audio selection if you will be connecting your receiver to a TV or A/V receiver that can decode Dolby Digital audio (look for the DOLBY DIGITAL logo) or Dolby Pro Logic II (look for the DOLBY PRO LOGIC II SURROUND logo).

### Digital Audio

This function sets the output format of the digital audio from the S/PDIF terminal.
“Auto” outputs the Dolby Digital audio as a digital bitstream in the same format as broadcast, and outputs MPEG audio as PCM stereo. Dolby Digital audio can be broadcast from 2.0 stereo to 5.1 surround sound.
“PCM” outputs Dolby Digital audio and MPEG audio as PCM stereo.

## 6.4 Power Saving Setup

**Automatic Off Timer** function requires a time to be set for the automatic shutdown of the digital receiver. The time which is set is the period from the last received command sent to the receiver until when the digital receiver will automatically go into the standby mode. The default setting is 6 hours. The setting can be changed to 4 or 8 hours or OFF. Select OFF if digital receiver is connected to a VCR or DVD recorder as a tuner.

## 6.5 Tuning Menu

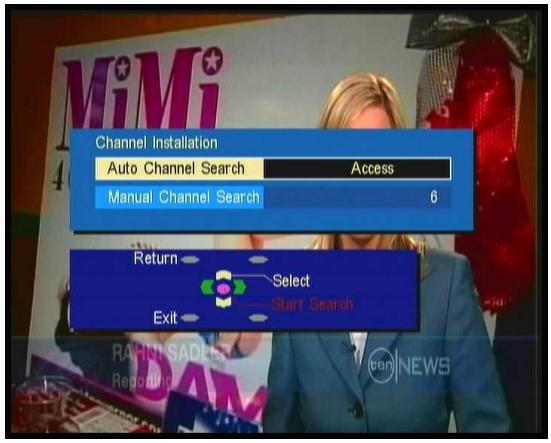
### Signal Display

The signal strength and signal quality are shown as separate bars. For the digital receiver to function correctly, both these bars need to be displayed in **green** colour. If either of the bars is displayed in the **orange** colour, there may be video and audio reception problems (see Troubleshooting). If either of the bars is displayed in **red** colour, there is a problem with the reception of the digital signal and the antenna and connection to the digital receiver need to be checked by a qualified antenna installer**. See Troubleshooting on page 22.**

### Channel Installation

When the receiver is initially set up, the channel tuning is initiated by selecting the "Auto Channel Search" function.

### Auto Channel Search

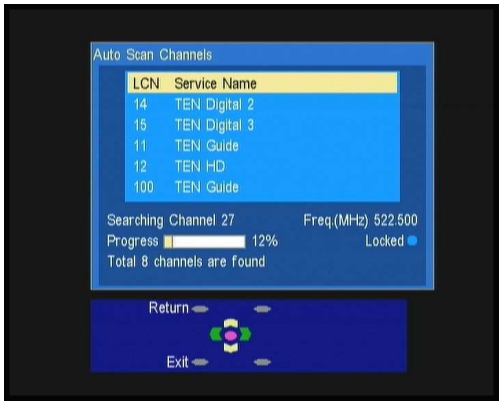



Auto Channel Search provides the easiest way to conduct a channel search. It does not require you to enter any other information. This function is strongly recommended for regular users. However, the user should be aware that all existing channels will be removed as soon as you confirm start of auto scan.

In the Auto Channel Search OSD, all channels found will be listed. The channel search may take a few minutes.

If you exit an auto scan during the scan process, some channels may not be available to you.

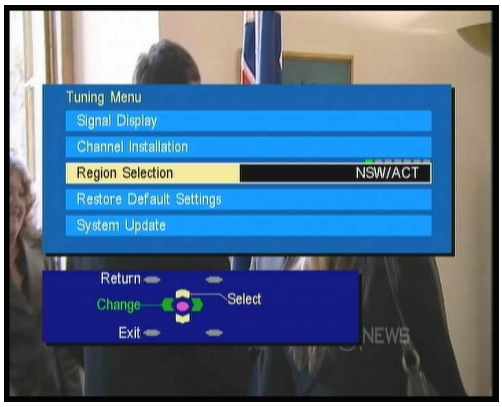
## Manual Channel Search




In the “Manual Channel Search” window you can set the specific channel to search. Press the left or right button then OK to select the broadcast RF channel you wish to search.

Note: The RF channel is not the same number as the station identification.

## Region Select

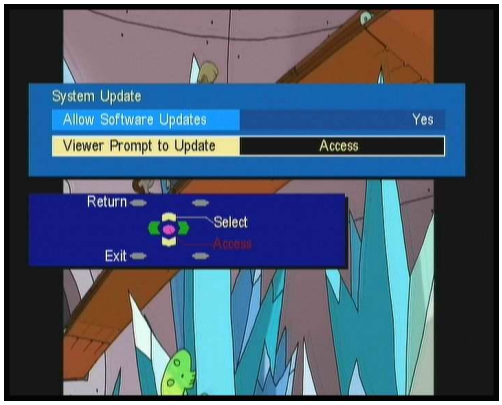



Using cursor buttons [◄ ►] select the region you live in. This setting will allow the digital receiver to display the current time on the information banner and on the control panel when the receiver is in the stand-by mode.

## Restore Default Setting

If you need to reset all the digital receiver settings to the factory shipping settings, this feature will do so. Once restore default settings has been done, the installation procedure of the STB will need to be done again. Please be very careful before you confirm this action.

## Receiver Software “System Update”




This digital receiver software can be updated to the latest version software by “over air download” (OAD).

### To Update Automatically

Set “Allow Software Updates” to “Yes”.
If there is a new software version being broadcast, the digital receiver will download this automatically. The automatic updating sequence happens when the digital receiver is switched to standby and at approximately 3:30am nightly. The automatic updating sequence takes several minutes to find and upgrade to new software and then switch back to standby. The digital receiver will NOT perform the automatic update sequence if it is switched on. Changing the setting to” No” stops the digital receiver from receiving any software updates automatically.

**To Update Manually**
Perform “Viewer Prompt To Update”.
Access the on screen display. Press OK to set the digital receiver to start searching for the OAD immediately. All video and audio is stopped for several minutes while the updating sequence is in progress.
Note: Recommended method is to use “Update Automatically”.

**USB Software Upgrade**
The operating software of the digital receiver can also be upgraded via a USB port. The USB port is located on the rear of the receiver and is covered by a sticker. The new software has to be loaded on a USB flash drive. The flash drive is plugged in to the USB port and the software is automatically loaded when the digital receiver is switched on. Please follow the displayed instructions.

### 6.6 Diagnostic Information

From here, you can get general information about the digital receiver including the serial number ID, software version and hardware version.

## 7 Teletext Operation

Teletext is only available on certain broadcast channels. The time taken to display the pages and sub-pages is set by the teletext transmitter. Teletext is also used for Closed Captioning of television programmes for the hearing impaired. Closed captions can be found on Teletext Page 801. The picture remains on the screen while you type in 801.

Some broadcast stations will have a message on the screen to tell you that closed captions are not available for this programme. Some broadcast stations give you no indication at all.

**TOP (Table of Pages) MODE**
In TOPTEXT mode, the red button moves to the previous page number and the green button moves to the next page number. The yellow and blue buttons correspond to different subjects. Pushing the coloured button can access these subjects. This is the current preferred method of operation in Australia.

**Red /Green / Yellow / Blue buttons**
In TOP TEXT mode these correspond to the differently coloured subjects.

### TV / Teletext mode

Press the TEXT button. The screen will display the Teletext page. Press again when you wish to return to TV mode.

Note: If you press the TEXT button while viewing a station that is not transmitting teletext, there may not be any indication on the screen. Press the TEXT button to return to normal viewing.

### Page Selection

Pages can be selected in two ways:

a. Press the Up / Down buttons to increase or decrease the page number by one.
b. By entering the page number, using 0 - 9 on the remote control.

### Hold

Hold is used to hold the Teletext page when viewing multi-page information. Press again to return to automatic page update.

### Index

Press INDEX to return to the main index page. Depending on the way information is transmitted, this may have to be pressed more than once to return to the main index page.

### Reveal

To reveal hidden words e.g. quiz page answers. Press again to hide.

### Sub Coded Page Access

When Teletext information exceeds more than one page, it may take some time for the automatic changing of the sub pages to reach the sub page you require. As each sub page is found its number is displayed at the bottom of the page so that you may select it by pressing left or right cursor key. As more sub pages are picked up, the display at the bottom of the page changes, so that you are always offered the most recently transmitted selection of sub pages.

While selecting dynamic mode , sub page will be changed dynamically and it will depend on which page now is available. And you can fix on specific sub page by pressing HOLD key, while in dynamic mode. You can also access to specific sub page by pressing left / right cursor key to select the sub page number.

### Closed Captions

The broadcasters sometimes transmit program with subtitles for the hard of hearing. These closed captions are accessed by the remote control STTL button.

# 8 Glossary

- **A/V:** A connector for the transmission of audio, video and status signal.
- **Component Video:** A connection interface using 3 cables with RCA connectors to transfer HD video between AV products.
- **Composite Video:** A connection interface using a signal cable with RCA connectors to carry SD video between AV products.
- **DVI:** Digital Video Interface is a computer interface for the passing of digital display signals.
- **HD:** High definition video has a picture resolution of either 1080i, 720p or 576p.
- **HDMI:** A connection interface that carries video and audio in digital format.
- **Information Banner:** A small window with simple navigation tools to display information about individual channels.
- **Menu:** An onscreen display offering a list of commands to select from.
- **Normal viewing:** The state of your receiver when no menus or windows are displayed on the screen, and a valid channel is tuned.
- **OAD:** Over air download is a method of upgrading the operating software of the STB. Also referred to as DVB-SSU.
- **Program Guide:** The instantaneously and continuously updated electronic program guide for quick and easy reference or program selection.
- **SD:** Standard definition has a picture resolution of 576i.
- **Set Top Box (STB):** A device that is capable of decoding and tuning digital signals and converting these signals into a format that is understood by your TV set. Also referred to as a digital receiver.
- **Standby mode:** A condition in which your receiver allows retrieval of up-dated information from input signals.
- **VCR:** Abbreviation for Video Cassette Recorder.

# 9 Troubleshooting

| Problem | Possible causes | What to do |
|---|---|---|
| The display on the panel does not light up. | Power Mains cable is not connected. | Check that the mains cable is plugged in to the power socket. |
| No sound or picture. | The A/V cord is not properly connected.<br>Wrong selection of output mode. | Check the cable connections and other equipment connected to your receiver.<br>Try another output switch position. |
| The remote control is not working. | Battery exhausted. | Change the batteries. |
| | Fluorescent light interfering with the remote control. | Switch off the light. |
| | Remote control is incorrectly aimed | Aim the remote control at the receiver. |
| Unable to tune channels. | TV antenna is not plugged in or digital TV is not available in this area. | Check the antenna cable connections or if an upgrade to your antenna is required to receive digital TV signals in this area. |
| Small “block type squares” sometimes appear on the picture, or the picture freezes. | See “DTV Reception Trouble Shooting Guide” below. | If ‘signal quality’ or ‘signal strength’ bar is not green, it indicates that the digital receiver is not receiving an adequate signal. The antenna and/or cable system needs to be checked (maybe replaced) by an antenna installer. |
| The digital receiver does not receive all the local TV channels. | The signal strength of some of the RF channels may be too low.<br>See “DTV Reception Trouble Shooting Guide” below. | Check that the antenna is suitable to receive all RF channels. Try doing channel tuning installation again. |

If you have tried all of the actions suggested above without solving the problem, please contact the Panasonic Customer Care Centre on **132 600** for additional help.

## DTV Reception Trouble Shooting Guide

**After a channel scan, some channels or no channels are found.**

1. **Did you connect your antenna as illustrated in 4.1?**
   If you have a pay TV box or a Video Recorder connected, then the HD-STB must be the first device connected to the antenna. (That is the antenna should be plugged into the STB and the STB RF OUT should then be plugged into the next device.

2. **Is the antenna wall socket in good condition?**
   For optimum and reliable contact performance, the antenna wall connector should be an ‘F’ (screw) type connector.

3. **Are you using a quality antenna fly lead between antenna wall socket and the HD-STB?**
   The use of RG6 or RG59 Quad Shield 75 ohm coaxial cable fly leads with metal ‘F’ connectors provides a secure, reliable connection that also greatly reduces impulse noise pickup. Low cost antenna fly leads with right-angled plastic moulded connectors are a common cause of poor reception and impulse noise pickup.

**Digital TV or some channels (services) may not have yet commenced in your area.**

There are some towns and regions in Australia that cannot yet receive digital television. In some towns and regions not all broadcasters have commenced their digital services. You can check the digital coverage for your area at the Reception Locator on the DBA website (www.dba.org.au/reception).

**Signal Strength**

The signal received may be too poor to allow the digital receiver to find some or all available channels.

Your old antenna may not be designed to receive all DTV channels.

Antenna reception performance has deteriorated due to weathering, corrosion of antenna connections / cabling and broken elements.

If you live within 5-10km of DTV transmission towers, a combined VHF/UHF antenna should be adequate. Outside this area, separate VHF and UHF antennas provide superior reception performance.

Depending on DTV signal conditions, some installations may instead require a VHF/UHF masthead amplifier.

In a shared antenna system the existing Master Antenna TV (MATV) system may have been originally designed for analogue PAL TV only, and may require a substantial upgrade or replacement to also carry DTV signals. Please consult your Body Corporate.

For your safety any external aerial should be installed by a reputable qualified installer and should comply with Australian Standard AS1417.1.

**Some channels display ‘No Signal’ or ‘Loss of Signal’**

Received signal is “too weak” (i.e.; poor quality) to generate a stable picture. Please check antenna & cabling or contact your local TV antenna installer.

**Picture regularly breaks up on some channels**

The received signal may be too weak to allow the digital TV receiver to reliably “lock” to the desired signal and generate a stable picture. Please check antenna & cabling or contact your local TV antenna installer.

## Impulse Noise

Interference from household appliances such as lights, refrigerators, washing machines, electric stoves, etc may cause pictures to break up and audio to mute or distort momentarily.

In the first instance, replace antenna fly-lead with a quality RG6 or RG59 Quad Shield 75 ohm coaxial cable fly lead. If problem persists, check / improve antenna & cabling or contact your local TV antenna installer. The possible cause could be poor quality coaxial cable installed in the walls or ceiling picking up impulse noise. This coaxial cable will need to be replaced with quad shield.

A masthead amplifier may be “over-boosting” the antenna signal, which is overloading the DTV tuner, resulting in poor reception on some or all channels. Please contact your local TV antenna installer.

## Picture very infrequently breaks up on some or all channels

Electrical atmospheric interference caused by local or distant lighting storms or heavy rain with wind in “leafy” locations may cause pictures to break up and audio to mute or distort momentarily.

Impulse noise interference from an infrequently used electrical appliance, or a passing vehicle or lawn mower with a “noisy” ignition system may be the cause.

# 10 Technical Specifications

| Features | Specifications | Parameters |
|---|---|---|
| Terrestrial Tuner/Demodulator | Input frequency | VHF, UHF Band |
| | Standard | DVB-T (ETS 300 744),<br>AS4599.1 2005 |
| | Channel Bandwidth | 7 MHz, Australian Channel |
| | COFDM System | 2k, 8k carrier<br>Hierarchical modulation |
| | Demodulation type | QPSK, 16QAM, 64QAM |
| | Guard Interval | 1/32, 1/16, 1/8, 1/4 active symbol duration |
| | FEC | 1/2, 2/3, 3/4, 5/6, 7/8 |
| System | CPU | 32-bit RISC CPU |
| | Transport | DVB De-multiplexer |
| Video Decoder (SD/HD) | Standard | ISO/IEC 11172-2 MPEG-1<br>ISO/IEC 13818-2 MPEG-2 MP@ML & MP@HL |
| | Field / Frame rate | 50 / 25 Hz |
| | HD/SD decoding capability, interlaced/progressive mode | 1080i, 720p, 576p and 576i |
| | Aspect ratio | 4:3 and 16:9<br>Letter Box supported |
| | Output modes | HD mode:<br>1080i(1125i) / 720p(750p) /576p( 625p)<br>SD mode:<br>576i(625i)<br>Output format changed by V Format (software switchable) |
| Caption / Teletext | Decoding and display of Closed Captions | Activated by STTL key |
| | Decoding and display of Teletext (ETS 300 706, Level 1.5, TOP) | Activated by TXT key |
| Audio Decoder | Standard | ISO/IEC 11172-3 MPEG-1 layer I and layer II<br>Dolby Digital audio |
| | Sampling rate | 32, 44.1, 48 and 96 kHz |
| | Digital Audio SPDIF Output format | IEC-60958 for PCM data<br>IEC-61937 for encoded Audio Data |
| Software Upgrade | Support Over Air Download and Download through USB port | DVB-SSU(ETSI TS 102 006), USB Flash Drive |
| Rear panel interface | RF input connector | IEC type, Female, 75 Ω |
| | Loop through Output connector | IEC type, Male, 75 Ω |
| | Y/Pb/Pr component video Output | 3x RCA connectors |
| | CVBS composite SD video Outputs and<br>Stereo Audio Outputs | 1x RCA connector for TV or video recorder<br>2x RCA connectors for TV audio, adjustable volume<br>2x RCA connectors for VCR audio, fixed volume |
| | Y/C SD video output | S-VHS for TV or video recorder |
| | HDMI | A type connector |
| | R/G/B/HS/VS | DB-15 (Female) |
| | Digital Audio SPDIF | Coaxial / Optical |
| | USB port | For software maintenance |
| User interface | Front panel | 4 Keypads, 7-segment display and 3 LED indicators, IR Sensor |

| | | |
|---|---|---|
| Power requirements | Mains input voltage | AC 220 to 240 V |
| | Mains input frequency | 50 / 60 Hz |
| | Power consumption | Normal operation: 14 W maximum |
| Environmental Condition | Temperature | 0° to 40°C |
| | Relative Humidity | 20 % to 80 % (Without condensation) |
| Dimension | Dimension | 365 mm x 245 mm x 60 mm |
| | Weight | 2.45 kg |
| Accessory | Remote Controller | |
| | Battery | AA 1.5 V x 2 |
| | User's manual | Operating Instructions |
| | A/V Cable | 1.5 m, R/G/B for component video<br>1.5 m, R/W for stereo audio |
| | RF Cable | 1.5 m, 3C2V, IEC Male/Female |
| EMC / Safety | Standard | AS/NZS CISPR 13:2003 Class B<br>AS/NZS 60065: 2003 |

Note
Design and specifications are subject to change without notice.

# Caring for your Digital Receiver

- Remove the mains plug from the wall socket. The cabinet can be cleaned with a dry clean cloth. Do not use solutions containing benzol or petroleum.
- Make sure that all the electrical connections are properly made. Do not connect any of your equipment (TV, video recorder, etc.) to the mains supply until you have properly connected all the other leads. Disconnect your Digital Receiver from the mains supply before you disconnect any other equipment from its rear panel.

## Trademark Acknowledgment and license notice

Trade Mark of the DVB Digital Video Broadcasting Project (1991 to 1996)
Declaration of Conformity No. 4296, 22nd August 2006

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"Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

HDMI, the HDMI Logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

## WARRANTY – Australia only

1. The product is warranted for 12 months from the date of purchase. Subject to the conditions of this warranty Panasonic or it's Authorised Service Centre will perform necessary service on the product without charge for parts or labour if, in the opinion of Panasonic, the product is found to be faulty within the warranty period.
2. This warranty only applies to Panasonic products purchased in Australia and sold by Panasonic Australia or its Authorised Distributors or Dealers and only where the products are used and serviced within Australia or it's territories. Warranty cover only applies to service carried out by a Panasonic Authorised Service Centre and only if valid proof of purchase is presented when warranty service is requested.
3. This warranty only applies if the product has been installed and used in accordance with the manufacturer's recommendations (as noted in the operating instructions) under normal use and reasonable care (in the opinion of Panasonic). The warranty covers normal domestic use only and does not cover damage, malfunction or failure resulting from use of incorrect voltages, incorrect installation, accident, misuse, neglect, build-up of dirt or dust, abuse, maladjustment of customer controls, mains supply problems, thunderstorm activity, infestation by insects or vermin, tampering or repair by unauthorised persons (including unauthorised alterations), exposure to abnormally corrosive conditions or any foreign object or matter having entered the product.
4. This warranty does not cover the following items unless the fault or defect existed at the time of purchase:
   (a) Video or Audio Tapes
   (b) Video or Audio Heads and Stylii resulting from wear and tear in normal use
   (c) Shaver Heads or Cutters
   (d) Cabinet Parts
   (e) User replaceable Batteries
   (f) Thermal Paper, Toner/Ink Cartridges, Drums, Developer, Film (Ink/Ribbon), Film Cartridge, Printer Heads
   (g) Microwave Oven cook plates.
   (h) Kneader mounting shaft unit (bread bakery)
5. If warranty service is required you should:
   - Telephone Panasonic's Customer Care Centre on 132600 or visit our website and use the Service Centre Locator for the name/address of the nearest Authorised Service Centre.
   - Send or bring the product to a Panasonic Authorised Service Centre together with your proof of purchase receipt as a proof of purchase date. Please note that freight and insurance to and / or from your nearest Authorised Service Centre must be arranged by you.
   - Note that home or pick-up/delivery service is available for the following products in the major metropolitan areas of Australia or the normal operating areas of the nearest Authorised Service Centres:
     (a) Picture tube (CRT) based Television Receivers (screen sizes greater than 66cm); Rear Projection TV's; Plasma/LCD televisions / displays (screen size greater than 103 cm)
     (b) Convection/Combination Microwave Ovens
     (c) Whiteboard (except portable type)
6. The warranties hereby conferred do not extend to, and exclude, any costs associated with the installation, de-installation or re-installation of a product, including costs related to the mounting, de-mounting or remounting of any screen, (and any other ancillary activities), delivery, handling, freighting, transportation or insurance of the product or any part thereof or replacement of and do not extend to, and exclude, any damage or loss occurring by reason of, during, associated with, or related to such installation, de-installation, re-installation or transit.

Panasonic Authorised Service Centres are located in major metropolitan areas and most regional centres of Australia, however, coverage will vary dependant on product. For advice on exact Authorised Service Centre locations for your product, please telephone our Customer Care Centre on 132600 or visit our website and use the Service Centre Locator.

Unless otherwise specified to the consumer the benefits conferred by this express warranty are additional to all other conditions, warranties, guarantees, rights and remedies expressed or implied by the *Trade Practices Act 1974* and similar consumer protection provisions contained in legislation of the States and Territories and all other obligations and liabilities on the part of the manufacturer or supplier and nothing contained herein shall restrict or modify such rights, remedies, obligations or liabilities. *November 2005*

**THIS WARRANTY CARD AND THE PURCHASE DOCKET (OR SIMILAR PROOF OF PURCHASE) SHOULD BE RETAINED BY THE CUSTOMER AT ALL TIMES**

If you require assistance regarding warranty conditions or any other enquiries,

please visit the Panasonic Australia website

www.panasonic.com.au or by phone on 132 600

*If phoning in, please ensure you have your operating instructions available.*

**Panasonic Australia Pty. Limited**
ACN 001 592 187 ABN 83 001 592 187
Locked Bag 505, Frenchs Forest, NSW 2086
www.panasonic.com.au

PRO-031-F01 Issue: 3.0

**Customer's Record**
The model number and serial number of this product may be found on its rear panel.
You should note this serial number in the space provided below and retain this book, plus your purchase receipt, as a permanent record of your purchase to aid in identification in the event of theft or loss, and for Warranty Service purposes.

Model Number Serial Number

**Matsushita Electric Industrial Co.,Ltd.**
**Panasonic Australia Pty. Limited**
Web site : www.panasonic.com.au
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